

NATURAL RESOURCES MANAGEMENT IN HISTORICAL AREAS

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Some people say that you should always begin a lecture with a story, so let me begin with a story.

Some of you may already dabble in the Japanese form of poetry called haiku. For those of you who are unfamiliar with it, it is a form of poetry set in syllables of 5, 7, and 5 in just three lines, and expresses a moment.

There is a story in Japan of a very famous haiku poet, named Bashō, who lived there several centuries ago. The story goes that one day a young man who desired to become as great a poet as Bashō approached him and said, "Master, will you teach me to compose haiku?" The master answered irritably, "Go away. Don't bother me. Come back tomorrow." This went on for several days and the old master finally told the young man, "All right, go out and compose a haiku and bring it to me tomorrow." The next morning the young man came rushing in excitedly and said, "Master, I have a haiku!" Translated into English, it went roughly like this:

A dragonfly!
 Pull its wings off
 A pepper pod!

The master said, impatiently, "No! No! No! You have killed the dragonfly. It should be:

A-pepper pod!
 Put wings on it
 A dragonfly."

So, too, with park managers. We are the student and the scientists are Bashō. We need scientists to keep us oriented correctly, to be headed in the right direction. People have a tendency to think, erroneously, that historical areas have very few natural resources problems and concerns. That is simply not so.

At Pu'uhonua o Hōnaunau National Historical Park in Kona, we have 181 acres of land that need to be looked after. About 55 acres of the Park is kept clear of most exotic plants; the other 126 acres are being cleared and will be kept cleared because,

historically, the area was open land with very few native trees, if any.

A plant survey was made for us in 1971 by Douglas Yen. His findings were printed in a report entitled, An Ethnobotanical Survey of the National Parks at Honaunau and Kalapana on the Island of Hawaii, and Kipahulu, Maui. Yen regards his work at Honaunau as following on the works of E. H. Bryan, Jr., A. Greenwell, and M. C. Neal in The Natural and Cultural History of Honaunau, Kona, Hawaii, Vol. I, Bernice P. Bishop Museum, 1957.

In terms of exotic plant control at Pu'uhonua o Hōnaunau our biggest problems are the ēkoa, red top, and red passion fruit. Plants like lantana, Christmas berry, and 'opiuma are not that much of a problem and can be controlled easier. As in the natural areas, our concern in carrying out an exotic plant removal program is that we do not eradicate native plants in the process. In our removal program, we do have clearances to use the chemicals Roundup for spraying and painting, Tordon 22K for painting of tree stumps only, and Atrazine for spraying. Each chemical we propose to use, and how we propose to apply it, must be cleared in advance by the United States Department of the Interior (USDI).

All exotic plant removal is done by cutting, spraying, and painting. We have ruled out the use of fire because of the many archaeological features present in the Park. Besides, hand-clearing appears to be doing the job. For a while, however, we were frustrated because our exotic plant removal problem was doubled when we fenced in the mauka and south boundaries of the Park to keep out domestic and wild cattle, and to prevent them from trampling on our archaeological sites and eating the native plants.

We know that under present conditions we will never be able to get rid of the ēkoa and red top entirely because they do exist on adjacent lands and are so prolific. Hopefully, what we will end up with is a land covered with red top, a few ēkoa here and there, and a few pockets of native plants. I should mention, however, that there is a concern looming over the horizon in the form of the fountaingrass that has been seen growing just mauka of the Park.

In historical areas, the re-planting of even native plants comes under the terms of the Historic Preservation Law of 1966. A planting project needs to be cleared through a Negative Declaration or an Environmental Impact Statement. For example, we have a coconut tree re-planting program that has been approved and now we are permitted to replace coconut trees that have died or have been cut down, with a sprouting coconut in the same spot. Today we know that a coconut grove is not self-perpetuating because people take the coconuts home with them or eat them in the Park. Also, depending on the area, a sprouting coconut needs to be watered until it takes hold. We do lose coconut trees from time to time because of the aphids-ants-fungus combination, and

perhaps bacteria, but not to the extent of causing any undue concern. Our greatest concern is that the coconut tree disease that is wreaking havoc with the trees in Florida does not come here. I understand that there is a variety of coconut that can withstand the disease but that tree grows no more than 50 feet high. We would lose all of our tall, slender coconut trees.

Another one of our concerns is water resources management. The Royal Fishponds were used by the Hawaiians to temporarily store types of fishes that could be eaten only by the Hawaiian Royalty. They were holding tanks. Today, these ponds are filled with Tilapia. Someone put them in many years ago, and they do a good job of keeping the algae growth and mosquito larvae population down. The Tilapia is an exotic; however, getting rid of it is not the major problem. All we would need to do would be to fill the fishponds with sand, leave them for a couple of months, then remove the sand. Our biggest problem would occur if we were to try to stock the ponds with fishes such as the kumu, mullet, and moi and keep them alive so the public can see the fishes as we would like them to. But those fishes do not survive very long in those brackish water ponds, and we do not have the money and manpower to keep re-stocking the ponds. Besides, even if we were successful, the high winter surfs would take them.

Sun-bathing is not permitted on the Palace Grounds, but many people do wade and swim in the cove at the Royal Canoe Landing Area. The State Department of Health checks the water once a month, but our untrained minds do get concerned about the amount of sea lettuce that grows on the rocks. While the Park has its own sewage treatment facility, the structures on the north side of Hōnaunau Bay do not. We are in the process of permitting the Hale o Ho'oponopono Outreach School located next to the Park to hook into our sewage treatment system. However, that will only be a partial solution to the pollution problem because the other homes in the area will still have their cesspools. In addition, sailboats anchor in the Bay, sometimes for days at a time, and there have been occasions when they have discharged their garbage and sewage into the Bay. This concerns us because on weekends and during vacations, there can be from 50 to 60 youngsters swimming in the Bay.

We are also concerned about the taking of tropical fishes in the area. Our own regulations permit us to control that activity from the land because the collecting of specimens, except by bona fide educational institutions with a written Special Use Permit, is prohibited. As far as I know, no study has been done on the numbers and types of tropical fishes being taken by commercial fishermen from the Hōnaunau area, but I suspect it must be considerable. Several years ago, I happened to spot an aqua-colored 35-gallon plastic drum as I was walking along the seashore. I looked into the drum and saw several small manini and a small kala. I approached the people who owned the drum and asked whether they were aware that they were violating a National Park Service regulation. One of the men said no, but that he had a State permit. I explained that that permit was not valid in the Park because they were collecting on National Park property, so

they dumped their fish and left. Now we see them taking their fish offshore, from a boat.

I guess what bothers me most about this commercial activity is that many of the fishes that are taken for salt water tanks are those that do not remain small, but that grow into large-sized fishes like the kala, palani, etc., that are used as food by people. I shudder to think of the number of fishes that do not survive in salt water tanks beyond a few days or a couple of weeks once they are bought by a customer. They must number into the thousands, each year.

Another similar activity is the taking of coral. We confiscate coral that is carried into the Park, but what good is that besides denying the taker the coral; the coral has already been picked. It is a shame, too, because I understand that Hōnaunau Bay has one of the finest coral gardens in West Hawai'i.

Also, at one time, we had a problem with a large commercial charter boat that anchored off the Park and in Hōnaunau Bay. It had a very large engine that was very loud. The owners also used a loudspeaker to give instructions to their customers who scuba dived off the boat. Wherever they anchored in coral, the coral was torn up. A study was made for us by the Cooperative Park Studies Unit at the University of Hawaii (CPSU/UH) on the extent of coral damage in Hōnaunau Bay. It was determined that the boat's anchor was not as much of a problem as its anchor chain. About 75 feet of chain was laid with the anchor on the bottom of the Bay to hold the boat. As the boat drifted, the anchor chain swayed and leveled any finger coral in its way. For me, personally, it was a great relief when the boat went back to the mainland about six months ago, I hear, due to a lack of business. It used to anchor in one spot in the open ocean about 150 yards from my house, after midnight or 3:00 AM or 4:00 AM. When the ship dropped anchor, it sounded as though the anchor was coming into my bedroom! Then, they would keep their engine running because they needed to generate power for the lighting system for the rest of the night.

At Pu'uhoonua o Hōnaunau National Historical Park, we do not know the relationship between seaweed harvesting and whether the activity is "beyond the line" and into the overharvesting area. Visually, things look okay but I am not sure.

Another activity that gives me great concern is 'opihi picking. It is difficult to find any 'opihi in the northern half of the Park; there are some available for picking in the southern half but who knows for how long? Much of the 'opihi picking occurs in the southern half of the Park, and on into Ki'ilae and Ho'okena to the south. Any attempt to regulate 'opihi picking will be met with great resistance. We will need quantitative studies to back ourselves up.

As far as mongooses in the Park are concerned, we are not really sure what kind of damage they are causing but there are an awful lot of them. At present, they attack the lunches of inattentive picnickers and occasionally break through our screen doors and enter the offices to attack what is in the trash cans. At times, they attack the feral kittens, francolins and other birds, and cockroaches and pill bugs.

Human erosion has been still another concern to us at Pu'u-honua o Hōnaunau, especially in the Palace Grounds area, but where do we begin? We know the great human traffic is not doing the area any good. Along with this human traffic problem is soil compaction and erosion effect on the Park's archaeological features.

Changing hats for a while, another area I supervise is Pu'u-koholā Heiau National Historic Site in Kawaihae. A few years ago, a plant survey was done there by CPSU/UH. The researchers discovered a rare and endangered native fern called pololei in the Historic Site. We have kept our eyes open for any sign of the fern for the last several years, but have been unable to spot it. Perhaps it is our inexperienced eyes, maybe it has died out, or maybe it grows only when conditions are "just right" and we have not had the right conditions since it was discovered. Also, we have had a brush fire in the area since its discovery. Then again, if we found the fern, what do we do with it?

At Pu'ukoholā Heiau National Historic Site there is talk also about a submerged shark heiau, Hale o Kapuni, being off-shore. People cannot seem to agree on its precise location. Over the centuries, silt carried by flooding waters from Makeāhua Gulch has covered up a couple of the suspected sites. One alleged site is supposedly covered up by the crushed coral near the Kawaihae small boat harbor. Our problem is to find the heiau, beginning in the most highly suspected area under water and silt. The next question is, how would we do this if we had the money? Once found, a determination can be made as to whether the structure is a heiau, or a fishtrap as some claim.

Another concern at Pu'ukoholā Heiau National Historic Site is air quality. The area is windy and usually dusty. There is a need to determine how much the visitors and the employees who work there daily are being affected by the dust. There is the problem with smoke during brush fires and with the ashes that are carried by the wind for weeks after a fire.

In addition to all of the above there are plans at Pu'u-koholā Heiau National Historic Site to re-plant native plants such as the coconut and pili grass. Whatever else grew there in the past is anyone's educated guess unless new evidence comes to light. The area averages 9 or less inches of rain a year. The removal of any existing kiawe trees should be done slowly until the re-planted natives have a chance to reestablish themselves. The exotic buffelgrass needs to be removed slowly as the native pili grass begins to take hold. This re-planting project must go through the environmental assessment procedure.

At both Pu'uhonua o Hōnaunau National Historical Park and Pu'ukoholā Heiau National Historic Site, a better understanding needs to be developed on the part of Park management where research studies are concerned. Despite our involvement with historical areas, we are not yet oriented very much toward the research aspects of natural history. There are times when we do not realize, for example, that a tree is diseased unless it is brought to our attention. I happened to see a coconut tree trunk standing in our grove that had obviously been dead for a while (killed within the last two years) but no one remembers whether the tree had been diseased, had been killed by a drought, or had died of old age. In other instances, we would receive research reports and would not know what questions to ask. I do not think this is because we are stupid; it is just that we are not yet natural history-oriented people.

The Cooperative Park Studies Unit at the University of Hawaii, under the direction of Dr. C. W. Smith, is trying very hard to keep things simplified for us. Once, we received the draft of a technical report entitled, "Summer Census of the Reef-Fish Community of Waters Adjacent to Pu'uhonua o Hōnaunau National Historical Park, Summers 1974-1978," by G. M. Ludwig, L. R. Taylor Jr., and D. M. Imose. It was difficult for me to follow the findings in their study because I had to flip back constantly to the front of the report to find out which fish the report was referring to. The report was using scientific names and I know fishes by their common names. It was a very frustrating experience for me. CPSU/UH has assured me that they will be using common names throughout the final technical report. Then I will have to flip back to the front of the report only if I have a burning need to know the scientific name of a particular fish.

In conclusion, if the scientist were to ask me what my greatest plea would be to the people doing natural history research for a historical area, it would be: Simplify! Simplify! Simplify! Common words, simple words, simple sentences! We are not interested in how smart the researcher is, only in using the report to help us manage better.

Help us to put wings on the pepper pod!